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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,563	05/02/2002	Dan L. Eaton	P3230R1C001-168	9765
9157	7590	07/01/2004	EXAMINER	
GENENTECH, INC. 1 DNA WAY SOUTH SAN FRANCISCO, CA 94080			FIELD, TAMMY K	
			ART UNIT	PAPER NUMBER
			1645	
DATE MAILED: 07/01/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/063,563	Applicant(s) EATON ET AL.	
	Examiner Tammy K. Field	Art Unit 1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 1-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
|---|---|

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Detailed Office Action

1. Claims 1-13 are pending and under consideration.

Priority

2. This invention is found to lack utility, see rejections below. Accordingly, priority is merited only to the filing date of Application Serial Number 10/063,560, filed 5/2/2002. Further, the instant applicant claims priority to continuation/CIP of PCT Applications that appear to contain no sequence data, and further a CIP of 09/403297 wherein sequence data is flawed and therefore, not searchable.

Should the applicant disagree with the examiner's factual determination above, it is incumbent upon the applicant to provide the serial number and specific page number(s) of any parent application filed prior to the date recited above which specifically supports the particular claim limitation for each and every claim limitation in all the pending claims which applicant considers to have been in possession of and fully enabled for prior to that date.

Specification

3. The disclosure is objected to because of the following informalities:
 - a. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
 - b. This application lacks a paper copy of the sequence listing, as required by 37 C.F.R. §1. 821(c). Applicants are required to submit such in response to this office action, and are further reminded that a statement in compliance with 37 C.F.R. §1. 821(f) must be made at such time.

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c. The use of the trademarks TWEENtm, PLURONICStm, LIFESEQtm, Superfect®, Dosper®, Eugene®, and BaculoGoldtm has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

d. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Appropriate correction is required.

Information Disclosure Statement

4. There does not appear to be an information disclosure statement filed.

Claim Objections

5. Claims 1-10 are objected to because of the following informalities: Claims should not recite Figures. (MPEP 2173.05(s)). Appropriate correction is required.

6. Claims 7-11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of Claims 7-11 appear to be redundant excerpts from parent Claim 6.

Rejections under 35 U.S.C. §101 and §112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific, substantial and credible asserted utility or a well established utility.

The claims encompass an isolated polypeptide having at least 80%, 85%, 90%, 95%, and 99% identity to SEQ ID NO: 56, also identified as encoded by cDNA under ATCC accession number 203005, and a chimeric polypeptide.

The specification discloses a protein designated PRO1027, and nucleic acid encoding such. The only discussion of the structure of the claimed polypeptide is through generalities such as "The proteins are refolded by diluting..." (page 125). It is unclear how the proteins had initially folded and further, the relation, if any to a claimed chimeric polypeptide, nor disclosure of any relationship between such structure and a purported function to either the claimed polypeptide and/or chimeric polypeptide claimed. There is no disclosure of any disease or condition in any way related to the claimed polypeptides of the instant invention, nor disclosure of any diagnostic or analytical assay that could be performed using the claimed polypeptide of SEQ ID NO: 56 and chimeric polypeptide.

The claims are directed to isolated polypeptides comprising SEQ ID NO: 56. Dependent claims are directed to chimeric proteins comprising the aforementioned polypeptide. The specification contains numerous asserted utilities including expressing the polypeptide in a vector and host cells, *i.e.* *E. coli* yeast, and virus (pages 124-132), use to produce monoclonal

antibodies that bind to PRO and fusion proteins that appear to lack adequate written description such as sequence identifiers (page 131), purification of PRO polypeptides using specific antibodies as it is unclear what "specific" means (page 133), and drug screening (page 134) as it appears only the contemplation of screening is described. The utilities that pertain solely to nucleic acids (e.g. hybridization, chromosome and gene mapping, anti-sense) would not convey to the encoded protein. With respect to the remaining utilities, none of these asserted utilities is specific for the disclosed PRO1027 protein, as each of the aforementioned utilities could be asserted for any naturally occurring protein, and further, as none of the asserted utilities requires any feature or activity that is specific to the disclosed PRO1027.

Utility must be in readily available form. In *Brenner v. Manson*, 148 U.S.P.Q. 689 (Sup. Ct., 1966), a process of producing a novel compound that was structurally analogous to other compounds which were known to possess anti-cancer activity was alleged to be useful because the compound produced thereby was potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" to the chemical arts when this term is given its broadest interpretation. However, the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. § 101, which requires that an invention must have either an immediately obvious or fully disclosed "real world" utility. The instant claims are drawn to a polynucleotide encoding a protein which has undetermined function or biological significance. Until some actual and specific activity can be attributed to the protein identified in the specification as PRO1027 protein or the polynucleotides encoding it, the claimed invention is incomplete.

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Merely using the polynucleotides to determine the properties of the encoded protein does not constitute a patentable utility.

It is further noted that PRO polypeptides; PRO1282, PRO1063, PRO1356, PRO3543, and PRO5990 polypeptides are disclosed as having given positive results in a single assay, the stimulation of TNF- α release in human blood, assay 128, at pages 139-140. It is unclear how the claimed polypeptide of PRO1027 is related, if at all to these PRO polypeptides. Further, in assay 128, it is stated that the PRO polypeptide was added to human blood, and then tested for the presence of TNF α by ELISA assay. It is recited "A positive in the assay is a higher amount of TNF- α in the PRO polypeptide treated samples as compared to the negative control samples." This assay is not considered to impart utility to the protein PRO1027. The reason for this determination is that no results are presented, and the standard disclosed, "a higher amount", is not considered to be an acceptable standard in the scientific community. It is well accepted in experimental science that, in order for a result to be positive, it must be *significantly* different from the control value, not "a higher amount" as reported in the specification. In this case, it is further noted that the protein (TNF- α) was detected using an extremely sensitive immunoassay, such that "a higher amount" does not indicate anything more than that a trace amount of TNF- α was present. Therefore, the assertion that the protein could be used "where stimulation of the release of TNF- α would be desired and for the therapeutic treatment of conditions wherein enhanced TNF- α release would be beneficial" is not substantial. The Examiner further notes that she is unaware of *any* condition in which stimulation of TNF- α release in the bloodstream would be desirable, even if, *in arguendo*, significant amounts of the cytokine were produced.

Accordingly, the tacit assertion that PRO1027 stimulates TNF- α release from blood cells does

not meet the requirements of 35 U.S.C. § 101, as the assertion of utility would not be considered substantial by a person of ordinary skill in the art.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-13 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific, substantial and credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

9. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to polypeptides having at least 80%, 85%, 90%, 95% or 99% sequence identity with a particular disclosed sequence. The claims do not require that the claimed polypeptide has any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of polypeptides that are defined only by sequence identity. Further, numerous claims define such in relation to the 'extracellular domain' of the protein or "its associated signal sequence", for which there is no description in the specification. The structure of the putative PRO1027 polypeptide and chimeric polypeptide is not disclosed with certainty in the specification; there is no disclosure that any

polypeptide is expected to be a transmembrane protein, nor of any extracellular domain, nor of any signal sequence.

To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even identification of any particular portion of the structure that must be conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, clearly states that “applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of *the invention*. The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed*.” (See page 1117.) The specification does not “clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed.” (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required.

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See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, polypeptides comprising the sequence set forth in SEQ ID NO: 56, or chimeric polypeptide thereof is sufficiently long and/or structurally stable to be used as antigens for the production of antibodies as the full breadth of the claims do not meet the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims that recite "the extracellular domain" of the protein are indefinite as no extracellular domain has been described. Therefore, the metes and bounds of the claims cannot be determined. For example, see Claim 1, parts (c) and (d). Further, if the protein had an extracellular domain, the recitation of "the extracellular domain"..." lacking its associated signal

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sequence” (claim 1, part (d), for example) is indefinite as a signal sequence is not generally considered to be part of an extracellular domain, as signal sequences are cleaved from said domains in the process of secretion from the cell. Also, the recitation that the polypeptide lacks “its associated signal peptide” is indefinite, as no signal peptide has been described. Claims that recite “ a heterologous polypeptide” and “the chimeric polypeptide” are indefinite, as the polypeptide(s) has not been described.

The remaining claims are rejected for depending from an indefinite claim.

11. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The deposit of biological organisms is considered by the Examiner to be necessary for enablement of the current invention (see 37 C.F.R. §1.808(a)). Examiner acknowledges the deposit of organisms under accession number ATCC 209421 under terms of the Budapest Treaty on International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure in partial compliance with this requirement. However, in order to be fully compliant with the requirement, applicants must state that the deposit will be maintained for a term of at least 30 years *and at least five (5) years after the most recent request for the furnishing of a sample of the deposit was received by the depository.* (See 37 C.F.R. §1.806).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Rhodes, S., (submitted to EMBL/GenBank/DDBJ, Public accessible Database with last sequence update May 1, 1999).

The claims are drawn to an isolated polypeptide having at least 80%, 85%, 90%, 95%, and 99% identity to SEQ ID NO: 56 (designated PRO1027).

Rhodes, S. teach a polypeptide of SEQ ID NO: 56 having a region of amino acids that is 100% identical to amino acids 1-77 of instant SEQ ID NO: 56 (GenCore version 5.1.6, © 1993-2004, us-10-10-063-563-56.rspt, see Result 1 summary and alignment).

Thus, Rhodes, S. anticipates the claimed invention.

13. Since the office does not have the facilities for examining and comparing applicants' polypeptide with the polypeptide disclosed in the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed polypeptide and the polypeptide of the prior art (*i.e.* that the polypeptide of the prior art does not possess the same material structural and functional characteristics of the claimed polypeptide). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

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Status of Claims

14. No claim is allowed.

Conclusion


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammy K. Field whose telephone number is (571) 272-0856.


The examiner can normally be reached on Monday-Friday from 7am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached at (571) 272- 0864.

Papers relating to this application may be submitted to Technology Center 1600 Group 1640 by facsimile transmission. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tammy K. Field
June 23, 2004


LYNETTE R. F. SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600